

PATENT CLAIMS

1. Process for the preparation of salt melts, and mixtures thereof, of the general formula

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MDHal (I)

in which

10 M is Li, Na, K, Rb or Cs,

D is Al, Ga, In or Tl, and

Hal is F, Cl, Br or I,

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characterized in that the starting materials, a metal halide and an alkali metal salt, are fed continuously or, if desired, discontinuously via a solids metering device and melted and brought to reaction in a heatable extruder (1) with forced conveying, and the reaction products are subsequently passed through a tower or column (3) containing alkali metal salt.

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2. Process according to Claim 1, characterized in that the starting materials are melted and brought to reaction in a heatable extruder (1) with forced conveying at a temperature between 50°C and 800°C.

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3. Process according to Claims 1 and 2, characterized in that the reaction is carried out under reduced pressure, atmospheric pressure or superatmospheric pressure in the presence of atmospheric oxygen or, if desired, under a protective-gas atmosphere.

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4. Process according to Claim 1, characterized in that the salt bed is processed in an extruder whose parts which come into contact with the salts or melts thereof are made of an Ni alloy or of metals coated with PTFE/PFA, enamel or ceramic materials and which

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*al*

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has a screw channel having an  $l/d$  ratio of between 3 and 25, at screw speeds of between 1 rpm and 75 rpm.

5. Use of salts of the general formula (I) according to Claim 1 as melt electrolyte in electrochemical cells and batteries.
- 10 6. Use of salts of the general formula (I) according to Claim 1 as melt electrolyte for rechargeable sodium batteries and primary batteries.
- 15 7. Use of salts of the general formula (I) according to Claim 1 as storage medium in heat stores.
- 20 8. Use of salts of the general formula (I) according to Claim 1 as heat-transfer agent.
9. Use of salts of the general formula (I) according to Claim 1 for covering and purifying molten metals.
- 20 10. Use of salts of the general formula (I) according to Claim 1 for electrocoating of high-melting materials.

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